



## *Urine Specimen Collection, Packaging and Transport Protocol: Urine Specimens Collected Analysis at a Level 1 or Level 2 LRN-C Laboratory*

This protocol is for human urine specimens collected for analysis at a Laboratory Response Network (LRN)-Chemical Level 1 or Level 2 laboratory. These specimens are collected for the analysis of a specific analyte or analytes. The determination of what agent is the analysis target is made in consultation with the Federal Centers for Disease Control (CDC), the Washington State Public Health Emergency Preparedness and Response Program Chemical Incident Response Unit (CIRU), the designated consulting toxicologist to the CIRU, and/or the designated consulting physician to the CIRU.

Collect specimens and package them for shipment as described below unless otherwise directed. Instructions on the shipment destination will be provided after the responsible local health department has contacted the Washington State Public Health Laboratories (WAPHL).

### **REQUIRED SPECIMENS**

Collect a sterile urine specimen using standard procedures (CLSI GP16).

### **SPECIMEN COLLECTION**

- Collect at least 25 mL into a sterile, screw-capped polypropylene (*not* polyethylene) container.
- Apply evidence tape prior to freezing the specimen.
- **Freeze (at –70 °C or on dry ice if available) as soon as possible.**

### **EVIDENTIARY REQUIREMENTS**

Apply evidence tape and the tape applicator's initials to each specimen container and secondary packaging as described below.

- **Evidence tape** - Place a single, unbroken strip of waterproof, tamper-evident forensic evidence tape on the container being careful not to cover the specimen ID label. Begin by sticking the tape to the specimen container at one side, somewhat below the top/cap, then apply it over the top, and finally bring it down and stick it to the opposite side of the container. Apply evidence tape to the blank containers in the same manner.
- **Initialing** - The individual applying the evidence tape must write their initials in indelible ink on the tape and container so their initials are approximately ½ on the tape and ½ on the container. Apply tape to the secondary container and initial in the same manner.
- **Chain-of-custody** - A chain of custody form must be completed for the specimens. A chain of custody example form is located in the Appendix. Chain of custody forms *do not* need to be transported with specimens. Each entity/organization handling the specimens is responsible for the specimens only during the time that they have control of the specimens. Each entity/organization receiving the specimens must sign-off on the chain of custody form of the entity/organization relinquishing the specimens to close that chain. When receiving specimens, each new entity/organization must begin their own chain of custody and have the entity/organization relinquishing the specimens sign their chain of custody to start the chain and indicate that they have transferred the specimens. *When specimens are transferred between entities/organizations, each entity/organization retains their chain of custody forms.*

**NOTE:** When the individual relinquishing the specimens (relinquisher) and the individual receiving the specimens (receiver) are not together at the time of specimen transfer, the relinquisher will document on their chain of custody that the receiver is FedEx Tracking Number or have the individual transporting the specimens sign the chain of custody to indicate that they have taken control of the specimens. Likewise, when the receiver receives the specimens, they will document on their chain of

custody that the relinquisher is FedEx Tracking Number or the have the individual transporting the specimens sign the chain of custody.

### **STORAGE REQUIREMENTS**

Specimens must be frozen immediately after collection (at  $-70^{\circ}\text{C}$  or on dry ice if possible) and maintained at freezing temperature ( $-20^{\circ}\text{C}$  at a maximum) continuously.

### **BLANKS**

Blanks for measuring background contamination must be included with each shipment of specimens. For **each lot number** of urine cups used for collection, please provide **two** (2) unopened urine containers.

### **DOCUMENTATION AND LABELING**

- Label specimens with labels generated by your facility. Follow your facility's procedures for proper sample labeling.
- Inclusion of the collector's initials, and date and time of collection will allow law enforcement officials to trace the specimen back to the collector should there be a need to have the collector testify as to the specimen collection.
- Maintain a list of names with corresponding sample identification numbers or bar codes at the collection site to enable results to be reported to the patients.
- Prepare an itemized shipping list for each secondary package. An example of an itemized list is located in the Appendix.

### **PACKAGING SPECIMENS FOR TESTING**

- Follow all current regulations in the packaging and shipping of specimens.
- Pack and ship these samples as **DIAGNOSTIC SPECIMENS**. Packaging for diagnostic specimens requires triple packaging, consisting of a leak-proof primary receptacle (the cup), a leak-proof secondary packaging that meets 49CFR173.199(b), and an outer packaging. Use styrofoam-insulated corrugated fiberboard outer packaging containers.
- Specimens must be maintained at freezing temperature ( $-20^{\circ}\text{C}$ ) during transportation, using dry ice if available, freezer packs if no dry ice is available.

#### ***Secondary packaging***

Primary receptacles must be packed in secondary packaging so they will not break, be punctured, or leak their contents into the secondary packaging under normal handling conditions. Fragile primary receptacles packaged together must be individually wrapped or separated so they are not in physical contact.

- Separate each urine cup from other containers.
- Place absorbent material between the primary receptacle and the secondary packaging. Use enough absorbent material to absorb the entire contents of the urine cups.
- Place cups in secondary packages. A variety of secondary packages may be used, for example, a gridded box wrapped with absorbent material and sealed inside a rigid leak-proof container or a two-part system of a plastic bag and Tyvek® envelope. Secondary containers must be marked with a Biohazard warning label or be completely red in color.
- Wrap a single continuous piece of evidence tape around the secondary container and initial, in indelible ink,  $\frac{1}{2}$  on the tape and  $\frac{1}{2}$  on the packaging.

### ***Outer packaging***

**Use Styrofoam-insulated corrugated fiberboard containers.** Outer packaging may not exceed 4 L (~1 gallon) capacity.

- Place additional absorbent material in the bottom of the outer container for cushioning and to absorb condensation.
- Add a layer of ***dry ice***. **Note:** Do not use large chunks of dry ice for shipment, because large chunks have the potential for shattering urine cups during transport.
- Place additional absorbent material between wrapped urine cups to reduce their movement within the outer container.
- Add an additional layer of ***dry ice***.
- Place a complete, itemized list of contents (with sample identification numbers) in a plastic zippered bag on top of the secondary packaging before closing the Styrofoam lid of the corrugated fiberboard container.
- Place the completed chain-of-custody forms in a plastic zippered bag on top of the Styrofoam lid of the corrugated fiberboard container.
- Affix labels and markings on the top of the packaging to increase the probability the package will be kept in the upright position.
- Affix labels and markings adjacent to the shipper's address that appears on the package.
- Clearly label the package with "From" sender's address and "To" recipients address.
- Place a label on the outer container that indicates the proper name, "DIAGNOSTIC SPECIMENS."
- Ensure that two (2) upwards-pointing orientation arrows are located on two opposite sides of the outer container.
- Place a standard size **DOT Class 9 diamond label** on the outer container on the same side of the container as the "Diagnostic Specimens" label.
- Place a label stating either "Carbon Dioxide, Solid, UN 1845, \_\_\_\_\_kg net wt " or "Dry Ice, UN 1845, \_\_\_\_\_kg net wt" on the top of the container near the Class 9 label. (Some Class 9 labels have this pre-printed on them.) Write in the mass of dry ice placed in the container.

### **CRITERIA FOR SPECIMEN REJECTION**

Specimens may be rejected if any of the following conditions are evident upon receipt:

- Specimen cup is broken or leaking.
- Specimen has warmed above -8 °C.
- Primary receptacle not sealed with evidence tape.
- Evidence tape has been tampered with.
- Itemized list of specimens is not included.

## SHIPPING SPECIMENS

Collected and packaged specimens will be sent to either the Washington State Public Health Laboratories (WAPHL) or to another designated LRN laboratory. The appropriate shipment destination will be provided after the responsible local health department *has contacted the WAPHL*.

*If* instructed to send the specimens to the Washington State Public Health Laboratories ship to:

Washington State Public Health Laboratories  
Chemical Terrorism Response  
1610 150th Street NE  
Shoreline, Washington 98155-9201

If specimens are sent by courier, driving directions to the WAPHL are:

From I-5: Take exit N.E. 145<sup>th</sup> St. (Exit #175, WA-523); head east on 145<sup>th</sup> Ave NE; turn LEFT onto 15<sup>th</sup> Ave NE; turn RIGHT on NE 150<sup>th</sup>; the Washington State Public Health Laboratories will be on your left.

In cases where specimens are shipped by commercial carrier follow all State and Federal shipping regulations.

## QUESTIONS

Please direct questions regarding the collection, packaging and/or shipping of specimens to one of the following people:

- Chemical Terrorism Laboratory Program Advisor – 360-236-3387
- Assistant Chemical Terrorism Laboratory Coordinator – 206-418-5643

**APPENDIX 1. SAMPLE ITEMIZED LIST OF CONTENTS – URINE TUBES OR CUPS**

Page \_\_\_\_ of \_\_\_\_

Shipping container # \_\_\_\_ of \_\_\_\_

**[FACILITY/AGENCY HEADER]**

Please indicate the approximate amount of urine collected in the UC column.

Please include 2 empty urine cups from each lot number of cups used to collect specimens.

UC = mL of Urine Collected

| Patient/Victim ID Label | UC<br>(mL) | Comments    |
|-------------------------|------------|-------------|
|                         |            | <hr/> <hr/> |
|                         |            | <hr/> <hr/> |
|                         |            | <hr/> <hr/> |
|                         |            | <hr/> <hr/> |

**APPENDIX 2. SAMPLE CHAIN-OF-CUSTODY FORM**

Page \_\_\_\_ of \_\_\_\_

Shipping container # \_\_\_\_ of \_\_\_\_

**[FACILITY/AGENCY HEADER]**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Collected By: \_\_\_\_\_  
(Printed Name) (Signature)

Reason: \_\_\_\_\_

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Received By: \_\_\_\_\_  
(Printed Name) (Signature)

Reason: \_\_\_\_\_

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Received By: \_\_\_\_\_  
(Printed Name) (Signature)

Reason: \_\_\_\_\_

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Received By: \_\_\_\_\_  
(Printed Name) (Signature)

Reason: \_\_\_\_\_

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Received By: \_\_\_\_\_  
(Printed Name) (Signature)

Reason: \_\_\_\_\_

**APPENDIX 3. SAMPLE URINE CONTAINER SHIPPING MANIFEST**

Page \_\_\_\_ of \_\_\_\_

Shipping container # \_\_\_\_ of \_\_\_\_

**[FACILITY/AGENCY HEADER]**

|  |                   |
|--|-------------------|
| <b>CENTERS FOR DISEASE CONTROL AND PREVENTION CHEMICAL TERRORISM URINE<br/>SPECIMEN COLLECTION AND SHIPPING MANIFEST</b> |                   |
| DATE SHIPPED: _____  |                   |
| SHIPPED BY: _____  |                   |
| CONTACT TELEPHONE: _____   |                   |
| SIGNATURE: _____   |                   |
| DATE RECEIVED: _____   |                   |
| RECEIVED BY: _____   |                   |
| SIGNATURE: _____   |                   |
| TOTAL NUMBER OF SPECIMENS<br>IN THIS CONTAINER:  | URINE CUPS:       |
| TOTAL NUMBER OF BLANK URINE CUPS PROVIDED IN THIS<br>CONTAINER:  | BLANK URINE CUPS: |
| COMMENTS: _____<br>_____<br>_____<br>_____<br>_____  |                   |